

REMARKS

Claims 1-10 are currently pending.

Reconsideration in light of the following is respectfully requested.

Claim Rejections – 35 USC § 103

Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawasaki et al. in view of either Pappis et al. or Ishii et al.

Applicants have previously argued that Kawasaki et al. fails to teach firing at less than 1700°C due to the formation of hexagonal BN. The Office has countered this argument by suggesting that Kawasaki teaches heating at 800°C based on the disclosure in col. 13, lines 1-4. It is the position of the Office that this recitation constitutes a preheat step. As stated in col. 13, lines 1-4 of Kawasaki, the sample is “passed through” a furnace at 800°C. Applicants respectfully submit that the claim scope is not being fairly considered and that a mere teaching of passing through a zone is contrary to the claimed invention wherein the sample is held at a temperature at or below 1000°C. Based on the totality of Kawasaki et al. one would expect the “passing through” phase to be rapid to avoid the formation of hexagonal BN. This teaches in a direction which is contrary to the claimed invention.

As set forth in the specification the holding period of claim 1 allows a certain ratio of materials to be volatilized. Claim 2 even sets forth the amount of initial starting material which is volatilized. If one followed the teachings of Kawasaki et al. the anticipated result would be hexagonal BN the percentage of which is proportional to the amount of time held at temperature.

The remaining art further leads one away from the holding phase. Ishii et al. teaches that heating below 1200°C is detrimental since the vaporization of boron oxide is too slow. Based on the combined teachings of Kawasaki et al. and Ishii et al. one of skill in the art would not be inclined to hold the material at less than 1000°C since the boron oxide vaporization would be slow and the resulting reaction product would be expected to be hexagonal boron hydride. Pappas et al. does not provide any further guidance and even further complicates the issue since the reaction is done in a sealed container at 100 torr instead of an open container at atmospheric pressure.

In summary, the prior art does not teach a step of holding the sample at a temperature of less than 1000°C and, in fact, teaches against such a step since either incomplete reaction would be expected, based on Ishii et al., or the undesirable hexagonal phase of boron nitride will result. The prior art therefore leads one away from the holding step of claim 1.

The prior art even further teaches against holding the temperature at less than 1000°C long enough to volatilize 80 weight percent of the starting material as set forth in claim 2.

Applicants respectfully submit that the rejection of Claims 1-9 under 35 U.S.C. 103(a) as being unpatentable over Kawasaki et al. in view of either Pappas et al. or Ishii et al. is improperly based on art which teaches against the steps recited in claim 1 and in claims 2-9 by dependence therefrom. Claim 10 further recites a counterflow of nitrogen which is therefore of a narrower scope than claim 1 in that regard and is patentable for, at least, the same reasons. Applicants respectfully request that the rejections be withdrawn and a notice of allowance is earnestly solicited.

CONCLUSIONS

Claims 1-10 are pending in the present application. All claims are believed to be patentable and notice thereof is respectfully solicited.

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Respectfully submitted,


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